MIRD No. 412552-16

DATA EVALUATION RECORD

1. **CHEMICAL:** ortho-Phthalaldehyde
   Shaughnessey No. 129017.

2. **TEST MATERIAL:** ortho-Phthalaldehyde Technical 99% A.I. (Cidex™)

3. **STUDY TYPE:** Freshwater Fish, 96-hour Acute Toxity Test
   Species used: Rainbow Trout

4. **STUDY ID:** Beglinger, J.M. and R.J. O'Boyle. 1989. Acute Aquatic Effects of o-Phthalaldehyde on the Rainbow Trout, Salmo gairdneri. Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY for Surgikos, Inc., Arlington, TX.

5. **REVIEWED BY:**

   Clyde R. Houseknecht
   Wildlife Biologist
   EEB/EFED

   Signature: Clyde Houseknecht
   Date: 1/4/90

6. **APPROVED BY:**

   Henry T. Craven, Head
   Review Section #4
   EEB/EFED

   Signature: Henry T. Craven
   Date: 1/5/90

7. **CONCLUSIONS:** The 96-hour acute LC_{50} toxicity of ortho-phthalaldehyde to rainbow trout is 0.072 ppm (95% confidence limits 0.046 - 0.160 ppm). The acute NOEC level is 0.046 ppm.

8. **RECOMMENDATIONS:** N/A

9. **BACKGROUND:** N/A

10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A

11. **MATERIALS AND METHODS:**

A. Test Animals: Juvenile rainbow trout were obtained from Mt. Lassen Trout Farm, Red Bluff, CA and were held at least two weeks prior to use.

B. Test System: All test organisms were acclimated to the diluent water prior to the test. Juvenile rainbow trout, as uniform in size as possible, were collected from stainless steel holding tanks and randomly allocated to test vessels. Biological loading within test vessels was kept below 1.0 g wet weight per liter of test solution. The average wet weight of the test organisms was 0.9 g.

Test solutions and dilution water were prepared in replicates of two for the test. The test material was mixed with stock water by vigorous stirring. The stock solution was proportionately delivered to the appropriate test vessels throughout the study. The stock solution was renewed at time 48 hours. Test concentrations were measured at time 0, prior to introducing the fish and at the end of the test.

Test vessels were seamless, glass chromatography jars containing 15 l of test solution. Observations of mortality and/or stress were made at 0, 6, 24, 48, 72, and 96 hours. Temperature, dissolved oxygen, and pH were measured at times 0, 24, 48, 72, and 96 hours.

C. Dosage: The test consisted of a geometric series of five dosage groups and a control group. Nominal dosages were 0.05, 0.1, 0.2, 0.4, and 0.8 ppm. Average measured concentrations were 0.046, 0.072, 0.16, 0.27, and 0.46 ppm.

D. Design: Freshwater fish, 96-hour, flow-through, acute toxicity study.

E. Statistics: The LC_{50} value was calculated using a computer program developed by ASTM (1987).

12. **REPORTED RESULTS:** There was no mortality in the control group. Zero percent, 50%, 100%, 100% and 100% of test fish died in treatment groups one to five respectively.

13. **STUDY AUTHOR'S CONCLUSION/QUALITY ASSURANCE MEASURES:** The rainbow trout 96-hour acute LC_{50} value for O-Phthalaldehyde technical was determined to be 0.072 ppm (95% confidence limits 0.046 - 0.160 ppm). The NOEC level was 0.046 ppm. Eastman Kodak Company warrants that this study conforms with Good Laboratory Practices as published by the U.S. Environmental Protection Agency.

14. **REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:**

A. Test Procedures: The procedures were in accordance with EPA's Standard Evaluation Procedure for Freshwater Fish 96-hour Acute Toxicity Test except for the following deviations:

- o Flow rates were not specified.
- o Raw data for the distribution of measured concentrations of test sustances were not provided.

B. Statistical Analysis: Mortality data were reanalyzed with the E.P.A.'s Toxinal program. The results agreed with those reported by the authors.

C. Discussion/Results: The 96-hour acute LC_{50} of ortho-phthalaldehyde to rainbow trout is 0.072 ppm.

D. Adequacy of the Study:

(1) Classification: Core

(2) Rationale: N/A

(3) Repairability: N/A

15. **COMPLETION OF ONE-LINER:** Yes, December 26, 1989